A FACT SHEET FOR

Considerations in Establishing a Municipal Oil and Grease Program

Scope of Oil and Grease Problems

Oil and grease, primarily generated from restaurants and other institutional food service establishments, are major contributors to sewer line blockages and overflows. Of approximately 5,000 sanitary sewer overflows reported in North Carolina in 1998, the Division of Water Quality conservatively estimates that about 20% were directly attributable to oil and grease. These blockages resulted in at least nine million gallons of untreated wastewater reaching North Carolina's rivers. In response to these sanitary sewer overflows (SSOs), the Division of Water Quality implemented a new enforcement policy and spill reporting requirements during 1998 and 1999. This policy promotes the reduction and elimination of overflows through increased enforcement actions while at the same time giving consideration to those municipalities with oil and grease programs in place. In addition to the regulatory requirements, sewer system maintenance adds significant expenses to local government public utility costs and ultimately tax rates. Municipalities report maintenance and repair costs in excess of $1 million associated with oil and grease blockages. In response to both the new enforcement policy and increasing maintenance costs, many municipalities have implemented local oil and grease programs to address discharges from institutional food service establishments.

Contents

This document provides guidance for those municipalities considering implementing or updating a local oil and grease program. Material was gathered by surveying seven municipalities with established and new programs through phone calls and presentations at the 1999 North Carolina American Water Works Association / Water Environment Association Pretreatment Workshop. All the responses compiled in the Summary Table represent the hard work of the surveyed municipalities. This document is not intended to be a critique of the local programs, but only to provide a review of the varying and innovative approaches taken by the surveyed group.

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Required Resources

Establishing a local oil and grease program is a resource-intensive undertaking. All municipalities surveyed stated that, ideally, one to three full-time equivalents (FTEs) are required to operate their programs depending on the number of dischargers. These resource requirements must be carefully considered when establishing a new program, and city council and public works directors should be made aware of the required resource commitment early in the planning stages. Furthermore, it is important to consider that establishing a program takes time. Several towns stressed not to be overly ambitious when starting out, and consider focusing on small traditional problem areas first.

Legal Authority

Generally, municipalities have taken one of three routes for establishing legal authority over institutional food service discharges: (1) modifying their Sewer Use Ordinance (SUO) to specifically address oil and grease sources, (2) writing a stand-alone SUO, or (3) directly permitting the sources. Municipalities should balance their available resources with the effectiveness of the enforcement tool. If municipalities believe the existing SUO will be effective then it is the least resource intensive means to provide the legal authority for a program. Conversely, local permits send a clear message of the municipalities' commitment to addressing discharges and may serve as a more effective enforcement tool. However, they require the most time and resources to write and implement.

Of the municipalities surveyed, Garner, Metropolitan Sewerage District (MSD) Buncombe, and Statesville said the DWQ guidance SUO was not strong enough and thus modified their existing SUOs to specifically address food — related discharges. Cary and the Charlotte-Mecklenburg Utility District (CMUD) developed stand-alone SUOs. Despite the time and resource commitment, Wilson felt local permits represented an effective tool to convey the city's seriousness in addressing the issue. Raleigh issued permits to sources that ignored the SUO requirements in identified problem areas, again to convey the city's seriousness in addressing the issue and pursuing enforcement against those who ignored it.

Despite the additional resource requirements to write stand alone SUOs and issue local permits, this route may be the most effective if the discharging audience resists the existing SUO requirements.

Local limits varied from 0 mg/L to 325 mg/L. Most municipalities adopted the DWQ guidance SUO limit of 100 mg/L. However municipalities should attempt to evaluate a limit specific to their sewer system and POTW through research, sampling, and headworks analysis. Modern treatment systems may be able to treat higher concentrations of oil and grease than the older systems on which the guidance limit was based.

Educational Efforts

Institutional food service establishments differ from industrial dischargers in that their time and available resources for activities other than food preparation is very limited, personnel turnover is higher, and they are often unaware of the environmental aspects of their operations. As a result, most municipalities strongly encourage educating sources on their discharges prior to pursuing enforcement. In many cases, taking time to explain the community's concerns and the larger scale problems caused by blockages helped develop a productive working relationship between the source and the town, and may also encourage establishments to be more proactive about solutions. Many of the municipalities interviewed believe a working relationship saves the time and headaches consistent with a more confrontational approach. The payback is greater if there is a cooperative effort between the two parties. One city suggested a two-year education-based trial period during which education would be stressed and results evaluated to determine if a more comprehensive enforcement-based program is required.

Educational efforts include meeting one-on-one with the sources, writing guidance manuals, and holding workshops. As new restaurants arrive, it may be a good time to introduce yourself to the new manager and educate them on the problems and the importance of keeping oil and grease from the sewer. The N.C. Division of Pollution Prevention and Environmental Assistance offers a series of fact sheets aimed at educating restaurants on oil and grease management and can also conduct educational workshops with the food service community within municipalities. Call Kim Fenton at (919) 715-6507 for more information. If educational efforts do not address the problems, enforcement may be necessary (See Enforcement Section).

Sizing Requirements and Grandfathering

All municipalities felt that outside grease traps were more effective than the inside models. Cary reported that approximately 90% of inside traps failed to meet SUO limits due to inadequate maintenance. As a result, most towns now recommend or require a 1,000 gallon (minimum) outside trap for new restaurants. Wilmington's and Cary's policies are unique in that they require a trap sized for a 10-minute and 24-minute detention time respectively. Most municipalities have a grand-fathering policy that makes allowances for space restrictions in older restaurants. Examples of these policies include allowing the installation of an indoor trap in lieu of an outside trap, or allowing sources to implement whatever practices are necessary to meet the local limit.

Identifying New Sources / Coordination with City Departments

It is important to identify new sources early in their planning stages so all local concerns and requirements can be addressed as soon as possible. Requiring a restaurant owner to dig up a parking lot and install a trap is best avoided for obvious reasons. A notification system with city planning or plumbing departments was frequently used, as these groups review proposed plans for new sources. Many cities report difficulties implementing this new procedure, but additional efforts in pursuing and establishing this relationship will prevent future problems.

Inspections and Sampling

Inspection Frequency

When establishing inspection and sampling frequencies, it is important to compare the size of the regulated community against the town's personnel and laboratory resources. Most of the municipalities surveyed inspected their oil and grease sources regularly. However, due to the large number of sources, not all conduct sampling. The Town of Garner inspects and samples each source three times per year. In lieu of conducting inspections and sampling, some towns had the restaurant submit hauling vendor paperwork on a regular frequency to ensure pumping was conducted. For example, Wilmington does not have a regular inspection schedule but requires sources to submit proof of pumping. If no paperwork is received, staff conducts an inspection and pursue enforcement. An inspection is also initiated amongst all restaurants in an area where a blockage occurs. During inspections most towns review the sink and trap setup, quantity of grease in the trap, clarity of the effluent, grease recycling bin, and hauling records. Wilson also requires that there be less than six inches of sludge in the bottom of the trap.

Cleaning schedule

Cleaning requirements also differed amongst municipalities. A portion of the surveyed towns have a cleaning frequency requirement, while others based the cleaning frequency on the type of establishment and the amount of grease generated. Other municipalities leave it up to the source to determine the cleaning frequency they needed to meet the local or SUO limit.

Sampling point

Careful consideration should be given to the most representative sampling point. Opinions on the best sampling point varied. Most towns that sample do so from near the effluent tee to get an indication of the effluent flowing from the trap / interceptor. Others sample at a downstream manhole to obtain a combined sample.

Enforcement

Enforcement varied widely amongst the municipalities. Because of the recent implementation of many of the programs, most municipalities have yet to issue any type of monetary penalties. Cary issues Notices of Non Compliance for violations. After an initial warning, Statesville fines violators $50, which increases by $50 for each continued violation. Raleigh has a $150 fine for paperwork violations and $500 for pumping violations. Most municipalities either presently or plan to pass the cost of clearing blockages and clean up back to the offending party.

Benefits to Date

The impressive benefits reported by municipalities who have closely tracked results justify the time and resource requirements of establishing an effective oil and grease program. Wilson reports sewer line maintenance costs fell by 97% from more than $30,000 to less than $2,000 in less than two years. Wilmington monitored a 22% reduction in oil and grease loading at the plant headworks during the first year of operation. MSD Buncombe also estimates savings of $45,000 in sewer maintenance costs per year. Many programs with recently implemented programs are still collecting data to quantify the financial benefits, but all report reduced sewer line overflows. Many municipalities also reported improved relationships with sources as well as with city departments.

The **Grease Goblin** is the mascot for DPPEA's Oil and Grease Management Program. He serves as a reminder to keep grease out of sinks and drains before it becomes a nuisance.

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North Carolina Municipal Oil and Grease Programs – Summary Table

GENERAL INFORMATION					LEGAL AUTHORITY				EDUCATION
City	**Contact**	**Year Established**	**Number of Sources**	**Est. FTEs to Run Program**	**Legal Authority**	**Justification**	**Limits (mg/L)**	**Sizing Requirements**	**Educational Efforts**
Cary	Leon Holt	1998	343	3	Stand alone SUO	Specific to oil and grease sources	275 - 325	Trap size required to provide 24 mins detention time	Workshops, phone calls to restaurants, news releases, Web site
CMUD	Pete Watkins / Ruby Tarver	1999	3500	3	Stand alone SUO	Modified to be specific to sources and outline requirements	100	Require min of 1,000 gallon trap	Training to plumbing inspectors and automotive shops
Garner	Tim Woody	1998	120	1	Modified SUO	SUO effective after modification	100	No requirement	Workshops, educational booklet
MSD Buncombe	Neal Klimek	1994	500 - 600	1	Modified SUO	Modified to prohibit oil and grease from restaurants	0	Require all sources to have some type of interceptor / trap	Workshops, meetings with restaurant managers, educational handouts
Raleigh	Burrell Brock	1998	800 - 900	3	Modified SUO and issued individual permits	Some restaurants ignored SUO requirements and thus issued individual permits as stronger enforcement tool	300	Require all sources to have some type of interceptor / trap	Meetings with restaurant managers, workshops
Statesville	Carol Rogers	1991	80	1	SUO	SUO effective after modification	100	Recommend minimum 1,000 gal outside trap	Meet with new restaurants
Wilmington	Dolores Bradshaw	1986	330	1	Modified SUO	Emphasized commitment of City	200	Require 1,000 gallon outside trap	Initial training workshops held
Wilson	Jimmy Pridgen	1995	200	2	Local Permit	Specific, clearer, and more effective enforcement tool	200	Trap size required to provide 10 mins detention time	Three one- hour training sessions, meet individually with new restaurants

North Carolina Municipal Oil and Grease Programs – Summary Table

GENERAL	SAMPLING AND INSPECTION			ENFORCEMENT	OTHER	
City	**Inspection / Sampling Frequency**	**Mandated Trap Cleaning Frequency**	**Paperwork Review**	**Response**	**Level of Coordination**	**Benefits to Date**
Cary	100 - 120 inspected and sampled per year	No	Yes	For not maintaining device Notice of Non Compliance - no fines issued at this point but plan $300 per violation. Blockages assessed $1,000 fine plus remediation costs	Planning Department	No oil and grease overflows in past year attributable to program and increased jetting
CMUD	1,000 per year inspected / No regular sampling frequency	Yes - Frequency specific to restaurant	Yes	No enforcement action taken at this time but plan to assess cleanup fee for blockages	Plumbing Department	To early to assess
Garner	Inspected and sampled three times per year	Yes - Frequency specific to restaurant	Yes	No enforcement action taken at this time	Planning Department	Reduced blockages
MSD Buncombe	Inspected once per year / No regular sampling frequency	Yes - Frequency specific to restaurant	Yes	Assessed cleanup fee for blockages	Planning Department	Save $45,000 in sewer maintenance costs per year
Raleigh	Quarterly inspections / No regular sampling frequency	Monthly – if permitted. Otherwise no mandated frequency	Yes - mailed to POTW	$150 for paperwork violation / $500 for pumping frequency violation for permitted sources	Utility Department	To early to assess
Statesville	Inspected and sampled twice per year	No	No	First sampling violation is a warning. Second failure $50 fine, each additional failure add $50 each time	Planning Department	Reduced blockages
Wilmington	Inspected if blockage in area or do not send in records / No regular sampling frequency	Monthly	Yes - mailed to POTW	$100 per month for not pumping. If cause of blockage source is assessed clean up costs.	Planning Department	Reduced oil and grease at HW by 22% and $1 mill. saved in sewer line maintenance in first year of operation
Wilson	inspected twice per year / No regular sampling frequency	Monthly	Yes	If identified as source of blockage and they do not have a trap in place they must install a trap. Minimum penalty $200, Civil penalty for blockage $700	Plumbing inspectors	Reduction in sewer line maintenance costs of 97%